



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

October 21, 2019

Maryanne Geisbush
Regulatory Consultant
Agent for Alligare, LLC
c/o Pyxis Regulatory Consulting Inc.
4110 136th St. Ct. NW
Gig Harbor, WA 98332

Subject: Notification per PRN 98-10 – Add optional referral statement
Product Name: Boulder
EPA Registration Number: 81927-54
Application Date: December 26, 2018
Decision Number: 552236

Dear Ms. Geisbush:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 for the above referenced product. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the action requested falls within the scope of PRN 98-10.

The label submitted with the application has been stamped “Notification” and will be placed in our records.

Should you wish to add/retain a reference to the company’s website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product’s label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA’s Office of Enforcement and Compliance.

If you have any questions, please contact Curtis Hildebrandt at 703-347-8198 or by email at hildebrandt.curtis@epa.gov.

Sincerely,

A handwritten signature in blue ink that reads "Emily Schmid".

Emily Schmid, Acting Product Manager 25
Herbicide Branch
Registration Division (7505P)
Office of Pesticide Programs

NOTIFICATION

81927-54

The applicant has certified that no changes, other than those reported to the Agency have been made to the labeling. The Agency acknowledges this notification by letter dated:

10/21/2019

[Note to reviewer: [Text] in brackets indicates optional text].

BOULDER

[Alternate Brand Name: Boulder 6.3]

GROUP 4 HERBICIDE

An Herbicide for Control of Woody Plants, Annuals and Perennial Broadleaf Weeds in Forests, Grass Pastures, Rangeland, CRP acres, Rights-of-Way, and in Non-Crop Areas and Ornamental Turf, Industrial Sites and Non-Irrigation Ditch Banks

ACTIVE INGREDIENT:	% BY WT.
Triclopyr BEE: (3,5,6 Trichloro-2-Pyridinyl)oxyacetic acid, butoxyethyl ester	83.9%
OTHER INGREDIENTS:	16.1%
TOTAL:	100.0%

Acid equivalent: Triclopyr – 60.3% - 6.3 lbs./gal.

**KEEP OUT OF REACH OF CHILDREN
CAUTION PRECAUCION**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

FIRST AID	
If swallowed:	<ul style="list-style-type: none"> • Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything by mouth to an unconscious person.
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-424-9300 for emergency medical treatment information.	

**PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
CAUTION**

Harmful if swallowed. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

[See] [inside] [label] [booklet] [for] [First Aid][,] [additional] [Precautionary Statements][,] [and] [Directions for Use] [including Storage and Disposal] [instructions][.]

EPA Reg. No. 81927-54

EPA Est. No.

Manufactured for:

Alligare, LLC
13 N. 8th Street
Opelika, AL 36801

Net Contents:

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers who handle this pesticide must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

ENGINEERING CONTROLS

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations

Users should:

- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters or rinsate.

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval (REI). The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Chemical-resistant gloves such as barrier laminate, nitrile rubber, neoprene rubber, or Viton
- Protective eyewear
- Shoes plus socks

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forest, nurseries, or greenhouses.

Do not enter or allow others to enter the treated area until sprays have dried, unless applicator and other handler PPE is worn.

Product Information

Boulder is an emulsifiable concentrate herbicide used to control unwanted woody plants and annual and perennial broadleaf weeds

- in forests
- on permanent grass pastures, rangelands, and conservation reserve program (CRP) acres (including non-irrigation ditch banks and fence rows within these areas)
- on non-crop areas including industrial manufacturing and storage sites
- on rights-of-way such as electrical power lines, communication lines, pipelines, roadsides, and railroads
- on fence rows
- on non-irrigation ditch banks
- around farm buildings
- on perennial bluegrass, perennial ryegrass, and tall fescue ornamental turf (including sod farms, commercial turf, and golf courses)

Boulder use on these sites may include application to grazed areas as well as for the establishment and maintenance of wildlife openings.

Use Precautions

- Local conditions may affect the use of herbicides. Consult your local specialist for advice in selecting treatments from this label to best fit local conditions.
- When applying this product in tank mix combination, follow all applicable use directions, precautions, and limitations on each manufacturer's label.

- Avoid direct application to Christmas trees as conifer injury may result. When treating unwanted vegetation in Christmas tree plantations, use sprays directed away from conifers.
- While Boulder is formulated as a low volatile ester, the combination of spray contact with impervious surfaces (such as roads and rocks) and increasing ambient air temperatures may result in an increase in the volatility potential for this herbicide, increasing a risk for off-target injury to sensitive crops such as grapes and tomatoes.
- Use of this product in certain portions of California, Oregon, and Washington is subject to the January 22, 2004 Order for injunctive relief in Washington Toxics Coalition, et. al. v. EP, C01-0132C, (W.D. WA). For further information, please refer to <http://www.epa.gov/espp/wtc>.

Use Restrictions

- Agricultural Use Requirements for Forestry Uses: For use of this product on forestry sites, follow PPE and Reentry restrictions in the Agricultural Use Requirements section of this label.
- Use Requirements for Non-Cropland Areas: No worker protection Standard worker entry restrictions or worker notification requirements apply when this product is applied to non-cropland.
- Boulder may injure certain turfgrass species. Do not apply to bahiagrass, bentgrass, bermudagrass, centipede grass, St. Augustine grass, or zoysiagrass, unless turf injury can be tolerated.
- Do not apply Boulder to exposed roots of shallow rooted trees and shrubs.
- Do not apply Boulder to golf course greens.
- Do not apply more than 2.5 pints (1.25 quarts) of Boulder (2 lb. ae of triclopyr) per acre in a single application when spot treating.
- On use sites other than grazable areas and forestry sites, do not apply more than 8 lbs. ae per acre per year of triclopyr (5 qts./A/yr Boulder).
- On use sites that may be grazed, including rights-of-way, pasture, fence rows, and rangeland, do not apply more than 2 lbs. ae per acre per year of triclopyr (1.25 qts./A/yr of Boulder).
- On forestry use sites, do not apply more than 6 lbs. ae per acre per year of triclopyr (3.75 qts./A/yr of Boulder).
- **In Arizona:** The state of Arizona has not approved Boulder for use on plants grown for commercial production; specifically on designated grazing areas or use on sod farms.
- Do not apply this product through any type of irrigation system.
- Do not apply to ditches used to transport irrigation water. Do not apply where runoff or irrigation water may flow onto agricultural land as injury to crops may result.
- It is permissible to treat non-irrigation ditch banks, seasonably dry wetlands, flood plains, deltas, marshes, swamps, bogs and transitional areas between upland and lowland sites. Do not apply to open water such as lakes, reservoirs, rivers, streams, creeks, salt water bays, or estuaries.
- Do not apply this product through mist blowers unless a drift control additive, high viscosity inverting system, or equivalent is used to control spray drift.
- Do not make direct applications or allow spray mists to drift onto cotton, fruit or orchard trees, shrubs, grapes, peanuts, soybeans, tobacco, vegetable crops, flowers, citrus, or other desirable broadleaf plants.
- Many forbs (herbaceous broadleaves) are susceptible to Boulder. Unless injury or loss of such plants can be tolerated, do not spray pastures containing desirable broadleaf forbs (especially legumes such as clover). After applications the stand and growth of established grasses is usually improved, especially when rainfall is adequate and grazing is deferred.

- While established grasses are tolerant to this product, newly seeded grasses may be injured until well established (as indicated by vigorous growth, tillering and the development of a secondary root system). Do not reseed treated areas for a minimum of three weeks after treatment.
- Portions of grazed areas that intersect treated non-cropland, rights-of-way and forestry sites may be treated at up to 8 lbs. ae per acre if the area to be treated on the day of application comprises no more than 10% of the total grazable area.

Grazing and Haying Restrictions

Except for lactating dairy animals, there are no grazing restrictions following application of this product.

- **Grazing Lactating Dairy Animals:** Do not allow lactating dairy animals to graze treated areas until the next growing season following application of this product.
- Do not harvest hay for 14 days after application.
- Grazed areas of non-cropland and forestry sites may be spot treated if they comprise no more than 10% of the total grazable area.

Slaughter Restrictions:

Withdraw livestock from grazing treated grass or consumption of treated hay at least 3 days before slaughter. This restriction applies to grazing during the season following treatment or hay harvested during the season following treatment.

APPLICATION DIRECTIONS

RATES

This table assists in determining proper volumes of Boulder in the spray tank to avoid exceeding the maximum use rates listed:

Total Spray Volume (gallons/acre)	Rate of Boulder	
	Forestry Sites (qts./100 gallons of spray)*	Non-Cropland Sites (qts./100 gallons of spray)**
400	1	1.25
300	1.25	1.7
200	1.75	2.5
100	3.75	5
50	7.5	10
40	9	12
30	13	16
20	19	25
10	38	56

*Do not exceed the maximum use rate of 3.75 qts. of Boulder (6 lbs. ae of triclopyr) per acre per year.

**Do not exceed the maximum use rate of 5 qts. of Boulder (8 lbs. ae of triclopyr) per acre per year, or 1.25 qts. of Boulder (2 lbs. ae of triclopyr) per acre per year for grazed areas, except on portions of grazed areas that meet the following requirement. Portions of grazed areas that intersect treated non-cropland, rights-of-way and forestry sites may be treated at up to 8 lbs. ae of Triclopyr per acre if the area to be treated on the day of application comprises no more than 10% of the total grazable area.

Spray Additives

Surfactants - If a standard agricultural surfactant is used, use at a rate of 1 to 2 quarts per acre.

Drift Control Agents – Agriculturally registered spray thickening drift control agents or high viscosity invert systems may be used with Boulder. When using these agents, follow all use directions and precautions on the product label. Do not use a thickening agent with the Microfoil boom, Thru Valve boom, or other systems that cannot accommodate thick sprays.

Mixing Directions

Apply Boulder foliarly by diluting with water or as an oil-water emulsion. NOTE: An oil-water emulsion performs more dependably under a broader range of conditions than a straight water dilution for woody plant control and is recommended for aerial applications.

Oil-Water Emulsions

NOTE: Prior to preparing oil-water emulsion sprays in the mixing tank, conduct a jar test to check spray mix compatibility.

Prepare the oil-water emulsion using diesel fuel, fuel oil, or kerosene plus an emulsifier such as Sponto 712 or Triton X-100.

- **Ground Application:** Add oil at a rate of 5 to 10% of the total to the spray mix (up to a maximum of 1 gallon of oil per acre) and use an agricultural spray emulsifier according to mixing instructions below.
- **Aerial Application:** Add a 1:5 ratio of oil and water (1 part oil to 5 parts water) to the spray mixture (up to a maximum of 1 gallon of oil per acre) according to the mixing instructions below.

Oil Mixture Sprays for Basal Treatment

When preparing an oil mixture, be sure to read and follow the use directions and precautions on the manufacturer's product label. Prepare oil-based spray mixtures using either diesel fuel, No. 1 or No. 2 fuel oil, kerosene or a commercially available basal oil. Substitute other oils or diluents only as recommended by the oil or diluent's manufacturer. Add Boulder to the required amount of oil in the spray tank or mixing tank and mix thoroughly. Reagitate if the mixture stands for over 4 hours.

Water Dilutions

To provide improved wetting of foliage using water dilutions, an agricultural surfactant at the manufacturer's recommended rate may be added to the spray mixture. To help minimize spray drift, a drift control and deposition aid cleared for application to growing crops is recommended.

Tank Mixing

Boulder may be applied in combination with labeled rates of other herbicides provided:

- The tank mix product(s) are labeled for the timing and method of application for the use site to be treated; and,
- Tank mixing is not prohibited by the label of the tank mix product(s).

NOTE: The following compatibility test (jar test) should be conducted prior to mixing ingredients in the spray tank when tank mixing Boulder with other materials:

1. Use a clear glass quart jar with lid and mix the tank mix ingredients in the required order and their relative proportions.
2. Invert the jar containing the mixture several times and observe the mixture for approximately ½ hour.
3. If the mixture balls-up, forms flakes, sludges, jells, oily films or layers, or other precipitates, it is not compatible and the tank mix combination should not be used.

Mixing Order for Tank Mixes: Add one-half of the needed water to the mixing tank and begin agitation. Add the tank mix partners in the order indicated below, allowing time for complete dispersion and mixing after the addition of each product.

1. Water soluble herbicide (if used)
2. Premix of oil, emulsifier, Boulder and other oil-soluble herbicide (if used); see below

Add the remaining water. During the final filling of the tank, a drift control and deposition aid cleared for application to growing crops may be added, as well as an agricultural surfactant if a water dilution rather than an oil-water emulsion spray is used. To ensure spray uniformity, maintain continuous agitation of the spray mixture during mixing, final filling and throughout application.

Premixing: Prepare a premix of oil, emulsifier (if oil-water emulsion), and Boulder plus other oil-soluble herbicides if used (for example 2,4-D ester). **Note:** Do not allow water or mixtures containing water to get into the premix or Boulder since a thick “invert” (water in oil) emulsion may form that will be difficult to break. An emulsion may also be formed if the premix or Boulder is put into the mixing tank prior to the addition of water.

Tank Mixing Precautions:

- Read carefully and follow all applicable use directions, limitations and precautions in the respective product labels.
- Do not exceed specified application rates. If products containing the same active ingredient are tank mixed, do not exceed the maximum allowable active ingredient use rates.
- When using spray equipment where the product formulations will be mixed in undiluted form (such as direct injection), special care should be taken to ensure tank mix compatibility.

Mixing with Liquid Fertilizer for Broadleaf Weed Control

For weed control and fertilization of grass pastures, Boulder may be tank mixed with liquid nitrogen fertilizer and applied foliarly. Use Boulder according to the use directions in this label for grass pastures, and apply at the rates recommended by your supplier or Extension Service Specialist provided that no maximum application rates specified on this label are exceeded. **Note:** Because foliage burn caused by liquid fertilizer may reduce herbicide effectiveness on woody plants, Boulder is not recommended for use with liquid fertilizer on woody plants (brush).

Test for mixing compatibility using the desired procedure and spray mix proportions in clear glass jar before mixing in spray tank. A compatibility aid such as Unite or Compex may be needed in some situations, and in difficult situations premixing Boulder with 1 to 4 parts water may help. **NOTE: Compatibility is best with straight liquid nitrogen fertilizer solutions. Mixing with N-P-K solutions or suspensions may not be satisfactory even with the addition of a compatibility aid.**

Fill the spray tank approximately half full with the liquid fertilizer, then begin agitating and add the herbicide. Complete filling the tank with fertilizer and apply immediately maintaining continuous agitation in the spray tank during application. **Do not store liquid fertilizer spray mixtures.** Because the likelihood of mixing or compatibility problems with liquid fertilizer increases under cold conditions, application during very cold weather (near freezing) is not recommended.

Note: Do not use spray equipment for other applications to land planted (or to be planted) to susceptible crops or desirable plants **unless** it has been determined that all phytotoxic herbicide residue has been removed by thoroughly cleaning the equipment.

APPLICATION EQUIPMENT AND TECHNIQUES

Avoid drift. Very small quantities of spray may seriously injure susceptible plants. Do not spray when wind is blowing toward susceptible desirable vegetation. The applicator may detect the potential for drift by producing smoke at or near the spray site and observing for a temperature inversion or for potential of off-site movement. If the smoke layers or indicates a potential of hazardous spray drift, do not spray.

Broadcast Applications

Boulder may be applied aurally by fixed wing aircraft or helicopter to rangeland, permanent grass pastures, and conservation reserve program acres. For all other use sites listed on this label, Boulder may only be applied aurally by helicopter.

For aerial application to rangeland, permanent grass pastures, and conservation reserve program acres:

Air (Fixed wing aircraft or Helicopter) – For aerial applications to rangeland, permanent grass pastures, and conservation reserve program acres, apply Boulder through a Microfoil or Thru-Valve boom, or use an agriculturally labeled drift control additive. Do not use a thickening agent with the Microfoil or Thru-Valve booms, or other systems that cannot accommodate thick sprays. Keep spray pressures low enough to provide coarse spray droplets and spray only when the wind velocity is low (follow state regulations). Avoid application during air inversions.

Air (Helicopter Only) – When making aerial applications on rights-of-way or other areas near susceptible crops, efforts should be made to minimize drift. Applications should be made with nozzles and pressures which provide adequate plant coverage, but minimize the production of fine spray particles. Drift can be minimized by applying through the Microfoil boom or Thru-Valve boom. Drift control agents or high viscosity invert systems can also be used to minimize drift. Do not use the high viscosity invert system unless it is as effective as the booms listed or as effective as available drift control agents. Use of low pressure nozzles; and operating these nozzles in the lower end of the manufacturer's recommendations is advised. To minimize drift, use a spray boom that is no longer than $\frac{3}{4}$ the rotor length, spray when wind velocities are low; or by using an approved drift control system.

Note: Reference within this label to equipment produced by or available from other parties is provided without consideration for use by the reader at its discretion and subject to the reader's independent circumstances, evaluation, and expertise. Such reference by Alligare, LLC is not intended as an endorsement of such equipment, shall not constitute a warranty (express or implied) of such equipment, and is not intended to imply that other equipment is not available and equally suitable. Any discussion of methods of use of such equipment does not imply that the reader should use the equipment other than is advised in directions available from the equipment's manufacturer. The reader is responsible for exercising their own judgment and expertise, or consulting with sources other than Alligare, LLC, in selecting and determining how to use its equipment.

Spray Drift Management

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications:

1. The distance of the outer most nozzles on the boom must not exceed $\frac{3}{4}$ the length of the wingspan or rotor.
2. Nozzles must always point backwards parallel with the air stream and never be pointed downwards more than 45 degrees.

Where states have more stringent regulations, they must be observed.

The applicator should be familiar with and take into account the information covered in the following **Aerial Drift Reduction Advisory**. **[This section is advisory in nature and does not supersede the mandatory label requirements]**

Aerial Drift Reduction Advisory

Information on Droplet Size

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (See Wind, Temperature and Humidity, and Temperature Inversions).

Controlling Droplet Size

- Volume – Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- Pressure – Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- Number of nozzles – Use the minimum number of nozzles that provide uniform coverage.
- Nozzle Orientation – Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.

- **Nozzle Type** – Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

Boom Length

For some use patterns, reducing the effective boom length to less than $\frac{3}{4}$ of the wingspan or rotor length may further reduce drift without reducing swath width.

Application Height

Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

Swath Adjustment

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller drops, etc.).

Wind

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. **Note:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions

Applications should not occur during a local, low level temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small-suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

Sensitive Areas

The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g. when wind is blowing away from the sensitive areas).

Ground – Applications should be made with nozzles and pressures which provide adequate plant coverage, but minimize the production of fine spray particles. Large droplet producing equipment, such as the Radiarc sprayer may aid in reducing off-target drift. Drift control agents or high viscosity invert systems can also be used to minimize drift. Use of low pressure nozzles; and operating these nozzles in the lower end of the manufacturer's specified rates is advised. To minimize drift, keep the spray boom as low as possible, apply in ≥ 20 gallons of spray volume per acre, spray when wind velocities are low; or use an approved drift control agent.

High Volume Leaf-Stem Treatments: Make applications no higher than brush tops with low pressure and coarse spray droplets to minimize spray drift. A drift control agent may be used to reduce spray drift.

Application Directions for Rights-of-Way, Industrial Sites, Non-Crop Areas, Non-Irrigation Ditch Banks, Forests, and Wildlife Openings including Grazed Areas on these Sites

Refer to Tables 1 and 2 of this label for a list of woody plants and broadleaf weeds that are controlled by Boulder.

Foliar Applications

Apply Boulder at rates of 1.25 pints to 5 quarts per acre for the control of broadleaf weeds and woody plants. Do not exceed the maximum use rate for the use site being treated. Consult the Use Restrictions section of this label for maximum use rates. Apply in enough water to provide uniform and complete coverage of the plants to be controlled. For best results make applications when woody plants and weeds are actively growing. Use higher doses within the range when brush averages 15 feet or more in height or when brush covers > 60% of the area to be treated.

For hard-to-control species such as ash, black gum, choke cherry, elm, maples (other than vine or big leaf), oaks, pines, or winged elm; during late summer applications when plants are mature; or during drought; use higher rates of Boulder alone or use in combination with Tordon® 101 Mixture or Tordon or Alligare Picloram K. If lower rates are used on hard-to-control species, re-sprouting may occur in the year following treatment.

If easy to control brush species dominate, rates less than those specified may be effective. Consult state or local extension personnel for information.

When making applications of Boulder in a tank mix with 2,4-D low volatile ester herbicide, use higher rates of Boulder within the range for satisfactory brush control.

When tank mixing, refer to the individual product labels for precautionary statements, restrictions, specified rates, approved uses, and a list of weeds and woody plants controlled.

Foliar Applications with Ground Equipment

High Volume Foliar Applications

For control of woody plants, apply Boulder at 1.25 to 4 pints per 100 gallons of spray mixture. Coverage should be thorough to wet all leaves, stems, and root collars. See Table in **RATES** section for relationship between mixing rate, spray volume and maximum application rate.

Tank Mixing: 1.25 to 4 pints of Boulder may be tank mixed with labeled rates of 2,4-D low volatile ester herbicide, Tordon, Alligare Picloram K, or Tordon 101 Mixture diluted to make 100 gallons of spray. These applications should be made in 100 to 400 gallons of total spray per acre depending on size and density of woody plants. When tank mixing, refer to the individual product labels for precautionary statements, restrictions, specified rates, approved uses, and a list of weeds and woody plants controlled.

Low Volume Foliar Applications

For control of woody plants, mix up to 13 quarts of Boulder in 10 to 100 gallons of spray solution. Adjust the spray concentration of Boulder and total spray volume per acre to match the size and density of target woody plants and kinds of spray equipment used. With low volume sprays, use sufficient spray volume to obtain uniform coverage of target plants including the surfaces of all foliage, stems, and root collars. For best results, a surfactant should be added to all spray mixtures. See the **SPRAY ADDITIVES** section for a rate recommendation.

Match equipment and delivery rate of spray nozzles to height and density of woody plants. When treating tall, dense brush, a truck mounted spray gun with spray tips that deliver up to 2 gallons per minute at 40 to 60 PSI may be required. Backpack or other types of specialized spray equipment with spray tips that deliver less than 1 gallon of spray per minute may be appropriate for short, low to moderate density brush. See Table in **RATES** section for relationship between mixing rate, spray volume and maximum application rate.

Tank Mixing: Up to 7.5 quarts of Boulder may be applied in tank mix combinations with labeled rates of Tordon, Alligare Picloram K, or Tordon 101 Mixture as a low volume foliar spray. These applications should be made in 10 to 100 gallons of spray solution. When tank mixing, refer to the individual product labels for precautionary statements, restrictions, application rates, approved uses, and a list of weeds and woody plants controlled.

Broadcast Application With Ground Equipment

Use equipment that will assure thorough and uniform coverage at spray volumes applied.

Woody Plant Control

Foliage Treatment: Apply 2.5 to 5 quarts of Boulder in a minimum of 5 gallons of spray solution per acre. Boulder at 1 to 2 quarts per acre may be tank mixed with labeled rates of 2,4-D low volatile ester, Tordon 101 Mixture, or Tordon or Alligare Picloram K in a minimum of 5 gallons of spray solution per acre. When tank mixing, refer to the individual product labels for precautionary statements, restrictions, application rates, approved uses, and a list of weeds and woody plants controlled.

Broadleaf Weed Control

Apply 1.25 pints to 2.5 quarts of Boulder in a minimum of 5 gallons of spray solution per acre. Apply at any time weeds are actively growing. Boulder at 5 fl. oz. to 2 quarts per acre may be tank mixed with labeled rates of 2,4-D amine or low volatile ester; Tordon or Alligare Picloram K; or Tordon 101 Mixture to improve the spectrum of activity. For thickened (high viscosity) spray mixtures, Boulder can be mixed with diesel oil or other inverting agent. When using an inverting agent, read and follow the use directions and precautions on the product label. When tank mixing, refer to the individual product labels for precautionary statements, restrictions, application rates, approved uses, and a list of weeds and woody plants controlled.

Aerial Application (Helicopter Only) - Aerial sprays should be applied using suitable drift control. See the **SPRAY ADDITIVES** and the **APPLICATION EQUIPMENT AND TECHNIQUES** section.

Foliage Treatment (Utility and Pipeline Rights-of-Way) – Apply 2.5 to 5 quarts of Boulder alone per acre or tank mix 2 to 2.5 quarts per acre of Boulder with labeled rates of 2,4-D low volatile ester; Tordon 101 Mixture; or Tordon or Alligare Picloram K. Do not apply more than 1.25 quarts per acre of Boulder alone or in tank mix to areas that may be grazed unless the requirements specified in the Use Restrictions section are followed. Apply in total spray volume of 1 to 30 gallons per acre. Use the higher rates and volumes when plants are dense or under drought conditions. When tank mixing, refer to the individual product labels for precautionary statements, restrictions, application rates, approved uses, and a list of weeds and woody plants controlled.

Basal Bark and Dormant Brush Treatments

To control woody plants in rights-of-way, in other non-crop areas, forests, rangeland and permanent grass pastures; use Boulder in oil or oil-water mixtures prepared and applied as described in the “Mixing Directions – Oil Mixture Sprays for Basal Treatment” section of this label. Do not graze treated areas following use of oil or oil-water mixtures. For non-foliar applications on rangeland and permanent grass pastures, apply no more than 1.25 quarts of Boulder (2 lbs. ae of triclopyr) per acre per year.

Oil Mixture Sprays - Add Boulder to the required amount of oil in the spray tank or mixing tank and mix thoroughly. If the mixture is allowed to stand for more than 4 hours, agitation is required.

Oil-Water Mixture Sprays - Prepare a premix of Boulder, oil, and surfactant in a separate container. Do not allow any water or mixtures containing water to get into Boulder or the premix. Mix in spray tank as follows:

1. Fill spray tank ½ full with water.
2. Begin tank agitation and continue throughout mixing and spraying.
3. Add premix
4. Continue moderate agitation.

5. Fill remainder of spray tank.

Note: If the premix is put in the tank without any water, the first water added may form a thick “invert” (water in oil) emulsion which will be hard to break.

Oil - Water Mixtures of Boulder and Tordon or Alligare Picloram K: When mixed together in oil, these herbicides are incompatible and will not form a stable mixture. Stable tank mixtures of Boulder and Tordon or Alligare Picloram K for basal bark application can be made if each product is first combined with a compatibility agent prior to final mixing in oil in the desired ratio. (See product bulletin for mixing instructions.)

Basal Bark Treatment - To control susceptible woody plants with stems less than 6 inches in basal diameter, mix 2.5 to 13 quarts of Boulder in enough oil to make 100 gallons of spray solution. Apply with knapsack sprayer or power spraying equipment using low pressure (20-40 PSI). Spray the basal parts of brush and tree trunks to a height of 12 to 15 inches from the ground. Thorough wetting is necessary for good control. Spray until runoff at the ground line is noticeable. Old or rough bark requires more spray than smooth young bark. Apply at any time, including the winter months, except when snow or water prevents spraying to the ground line.

Low Volume Basal Bark Treatment - To control susceptible woody plants with stems less than 6 inches in basal diameter, mix 12.7 to 19 gallons of Boulder in enough oil to make 100 gallons of spray solution. Apply with a back pack or knapsack sprayer using low pressure and a solid cone or flat fan nozzle. Spray the basal parts of brush and tree trunks in a manner which thoroughly wets the lower stems, including the root collar area, but not to the point of runoff. Herbicide concentration should vary with size and susceptibility of species treated. Apply at any time, including the winter months, except when snow or water prevents spraying to the ground line or when stem surfaces are saturated with water.

Boulder Plus Tordon or Alligare Picloram K in Oil Tank Mix – Boulder and Tordon or Alligare Picloram K may be applied as a low volume basal bark treatment to improve control of certain woody species such as ash, elm, maple, poplar, aspen, hackberry, oak, oceanspray, birch, hickory, pine, tanoak, cherry, locust, sassafras, and multiflora rose.

Streamline Basal Bark Treatment - To control or suppress susceptible woody plants, mix 12.7 to 19 gallons of Boulder with 10% penetrant such as Cide-Kick or similar penetrant in enough oil to make 100 gallons of spray solution. Apply with a backpack or knapsack sprayer using equipment which provides a directed straight stream spray. For stems less than 3 inches in basal diameter, apply sufficient spray to one side of the stems to form a treated zone that is 6 inches in height. When the optimum amount of spray mixture is applied, the treated zone should widen to encircle the stem within approximately 30 minutes.

Treat both sides of stems which are 3 to 4 inches in basal diameter. Direct the spray at bark that is approximately 12 to 24 inches above the ground. Pines (loblolly, slash, shortleaf, and Virginia) up to 2 inches in diameter breast height (dbh) can be controlled by directing the spray at a point approximately 4 feet above ground. Vary spray mixture concentration with size and susceptibility of the species being treated.

Best results are achieved when applications are made to young vigorously growing stems which have not developed the thicker bark characteristic of slower growing, under-story trees in older stands. This technique is not recommended for scrub and live oak species, including blackjack, turkey, post, live, bluejack and laurel oaks, or bigleaf maple. Apply from approximately 6 weeks prior to hardwood leaf expansion in the spring until approximately 2 months after leaf expansion is completed. Do not apply when snow or water prevent spraying at the desired height above ground level.

Low Volume Stem Bark Band Treatment (North Central and Lake States) - To control susceptible woody plants with stems less than 6 inches in basal diameter, mix 12.7 to 19 gallons of Boulder in enough oil to make 100 gallons of spray mixture. Apply with a backpack or knapsack sprayer using low pressure and a solid cone or flat fan nozzle. Apply the spray in a 6 to 10 inch wide band that completely encircles the stem. Spray in a manner that completely wets the bark, but not to the point of runoff. The treatment band may be positioned at any height up to the first major branch. For best results apply the

band as low as possible. Spray mixture concentration should vary with size and susceptibility of species to be treated. Applications may be made at any time, including winter months.

Thinline Basal Bark Treatment - To control susceptible woody plants with stems less than 6 inches in diameter, apply Boulder either undiluted or mixed at 50-75% v/v with oil in a thin stream to all sides of the lower stems. The stream should be directed horizontally to apply a narrow band around each stem or clump. Use a minimum of 2 to 15 milliliters of Boulder or oil mixture with Boulder to treat single stems and from 25 to 100 milliliters to treat clumps of stems. Use an applicator metered or calibrated to deliver the small amounts required.

Dormant Stem Treatment

Dormant stem treatments can be used to control susceptible woody plants and vines with < 2 inch diameter stems. Plants with > 2 inch diameter stems may not be controlled and resprouting may occur. This application method works best in dense areas with small diameter brush. Dormant stem treatments of Boulder can also be used as a chemical side-trim to control lateral branches of larger trees that encroach onto roadside, utility, or other rights-of-way.

Mix 2.5 to 5 quarts of Boulder in 2 to 3 gallons of crop oil concentrate or other recommended oil. Add this mixture to enough water to make 100 gallons of spray solution. Use continuous agitation to maintain mix. Apply in 70 to 100 gallons per acre with Radiarc, OC or equivalent nozzles, or handgun to ensure uniform stem coverage. In western states, apply anytime after woody plants are dormant. In other areas, apply anytime within 10 weeks of bud break, generally February through April. Do not apply to wet or saturated bark as poor control may result.

For improved control of black cherry, mix Boulder with 4 quarts of Weedone 170 herbicide. When tank mixing, refer to the individual product labels for precautionary statements, restrictions, application rates, approved uses, and a list of weeds and woody plants controlled.

For root suckering species such as sumac, sassafras and locust, also spray the ground under the plant to cover small root suckers which may not be visible above the soil surface.

Cut Stump Treatment

Resprouting of cut stumps of susceptible species can be controlled by mixing 12.7 to 19 gallons of Boulder in enough oil to make 100 gallons of spray solution. Apply at low pressure with a backpack or knapsack sprayer; using either solid cone or flat fan nozzles. Apply to the root collar area, sides of the stump, and the outer portion of the cut surface including cambium. The treated area should be thoroughly wet, but do not apply to the point of runoff. Vary spray mixture concentration according to size and susceptibility of treated species. Applications can be made at any time of the year, including in winter months. Do not apply when snow or water prevent application to the ground line.

Cut Stump Treatment in Western States

Resprouting of cut stumps of salt-cedar and other *Tamarix* spp., bigleaf maple, tanoak, Oregon myrtle, and other susceptible species can be controlled by treating the cambium and adjacent wood around the circumference of the cut stump to wet. Applications may be made at any time during the year, however, reduced control may occur during periods of moisture stress as can occur in late summer. Use an applicator which can be calibrated to deliver small amounts.

Note: All basal bark and dormant brush treatments may be used on grazed range and permanent pasture land provided that no more than 1.25 quarts/acre/year of Boulder are applied. Large plants or species requiring higher rates of Triclopyr may not be completely controlled. See the **Use Restrictions** section for grazing restrictions.

Chemical Mowing on Non-Cropland Sites Infested with Annual and Perennial Broadleaf Weeds or Woody Plants

To control annual and perennial broadleaf weeds and for suppression and stem density reduction of woody plants that occur on rights-of-way, airport grounds, petroleum tank farms or other industrial sites, Boulder may be applied to the cut surfaces of weed or brush stubble under the deck of a rotary mower

such as the Lucas "64" System or other approved equipment that is designed to uniformly apply the herbicide. Apply when growing conditions are favorable and the weeds are actively growing.

Broadleaf Weed Control: Using a minimum spray volume of 3 gallons per acre, apply the rate specified in the "Broadcast Applications with Ground Equipment – Broadleaf Weed Control" section of this label. To improve weed control or broaden the spectrum of weeds controlled, follow the label directions for herbicides that may be applied in tank mix combination with Boulder.

Woody Plant Control: For suppressing and reducing stem density of woody species, use 2 to 3.75 quarts of Boulder in a minimum spray volume of 5 gallons per acre. To improve woody plant control or broaden the spectrum of woody plants controlled, follow label directions for herbicides that may be applied in tank mix combination with Boulder.

Forest Management Applications

For broadcast applications, apply the specified rate of Boulder in a total of 5 to 25 gallons per acre by air or in 10 to 100 gallons per acre by ground. Use sufficient spray volumes to provide thorough coverage of treated foliage. Use application systems designed to prevent spray drift to off-target sites. Nozzles or additives used for drift minimization that produce larger droplets may require higher spray volumes to provide adequate plant coverage.

Conifer Plant Back Interval – Conifer injury may occur if conifers are planted sooner than 1 month after Boulder treatments at rates up to 2.5 quarts per acre; or if conifers are planted sooner than 2 months after treatment with rates of 2.5 to 3.75 quarts per acre. When herbicide tank mixtures are used for forest site preparation, use the longest plant back waiting period recommended on any tank mix partner.

Forest Site Preparation (Not For Conifer Release)

Broadcast Applications in Southern States (Alabama, Arkansas, Delaware, Florida, Georgia, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia) - To control susceptible woody plants and broadleaf weeds, apply 2.5 to 3.75 quarts per acre of Boulder. Boulder may be applied at a rate of 1.25 to 2.5 quarts per acre in a tank mix combination with labeled rates of Tordon 101 Mixture or Tordon or Alligare Picloram K to broaden the spectrum of woody plants and broadleaf weeds controlled. Tordon 101 Mixture and Tordon or Alligare Picloram K are not registered for use in California and Florida. For grass control, Boulder, alone or in combination with Tordon or Alligare Picloram K or Tordon 101 Mixture, may be tank mixed with other herbicides registered for grass control in forests.

Refer to the individual product labels for precautionary statements, restrictions, application rates, approved uses, and a list of weeds and woody plants controlled.

Broadcast Applications in All Other States (Except those listed as Southern States) - To control susceptible woody plants and broadleaf weeds, apply 2 to 3.75 quarts per acre of Boulder. Boulder may be applied at a rate of 1 to 2 quarts per acre in a tank mix combination with labeled rates of Tordon 101 Mixture, Tordon or Alligare Picloram K, or 2,4-D low volatile ester to broaden the spectrum of woody plants and broadleaf weeds controlled. Tordon 101 Mixture and Tordon or Alligare Picloram K are not registered for use in California and Florida. For grass control, Boulder, alone or in combination with Tordon or Alligare Picloram K or Tordon 101 Mixture, may be tank mixed with other herbicides registered for grass control in forests.

Refer to the individual product labels for precautionary statements, restrictions, application rates, approved uses, and a list of weeds and woody plants controlled.

Site Preparation in Southern Coastal Flatwoods - To control susceptible broadleaf weeds and woody species such as gallberry and wax-myrtle, and for partial control of saw-palmetto, apply 1.25 to 2.5 quarts per acre of Boulder. To control species such as fetterbush, staggerbush, titi, and grasses, apply Boulder at 1.25 to 2 quarts per acre in a tank mix combination with labeled rates of Arsenal Applicator's Concentrate or Alligare Imazapyr 4SL herbicide. To control gallberry, wax-myrtle, broadleaf weeds, and grasses, 1.25 to 2 quarts per acre of Boulder may be applied in tank mix combination with labeled rates of Alligare Glyphosate 4 herbicide.

Apply as broadcast applications during site preparation of flat planted or bedded sites; or as bands over the tops of beds on bedded sites. Best results will occur if applications are made in late summer or fall. Efficacy may not be satisfactory for early season applications made prior to August.

Note: Do not apply after planting pines.

Conifer Release Applications

Note: Conifer release applications may cause temporary damage and growth suppression of conifers where direct contact occurs; however, injured conifers should recover and grow normally. Over-the-top spray applications can kill pines.

Directed Sprays

To release conifers from competing hardwoods and brush such as red maple, sugar maple, striped maple, sweetgum, red and white oaks, ash, hickory, alder, birch, aspen, pin cherry, *Ceanothus* spp., blackberry, chinquapin, and poison oak, mix 2.5 to 13 quarts of Boulder in enough water to make 100 gallons of spray mixture. Direct the spray onto foliage of competitive hardwoods using knapsack or backpack sprayers with flat fan nozzles or equivalent. Make applications any time after the hardwoods and brush have reached full leaf size, but before autumn coloration. The majority of treated hardwoods and brush should be less than 6 feet in height to ensure adequate spray coverage. Care should be taken to direct the spray solution away from conifer foliage, particularly foliage of desirable pines. See the **RATES** Table in the **APPLICATIONS DIRECTIONS** section for relationship between mixing rate, spray volume and maximum application rate.

Mid-Rotation Understory Brush Control in Southern Coastal Flatwoods Pine Stands (Ground Equipment Only)

Make broadcast applications of Boulder at 1.25 to 2.5 quarts per acre for control of broadleaf weeds and susceptible woody plant species such as gallberry and wax-myrtle. To broaden the spectrum of woody plants controlled to include fetterbush, staggerbush, and titi, apply 1.25 to 2 quarts per acre of Boulder in a tank mix with labeled rates of Arsenal Applicators Concentrate. Saw-palmetto will be partially controlled by use of Boulder at 2.5 quarts per acre or by a tank mix of Boulder at 1.25 to 2 quarts per acre with either Arsenal Applicator's Concentrate, Alligare Imazapyr 4SL, Escort, or Alligare MSM 60.

These mixtures should be broadcast applied over target understory brush species, **but to prevent injury to pines, make applications underneath the foliage of pines.** For best results, apply 30 or more gallons per acre of spray solution. Make applications in late summer or fall. Efficacy may not be satisfactory when applications are made in early season prior to August.

Refer to the individual product labels for precautionary statements, restrictions, application rates, approved uses, and a list of weeds and woody plants controlled.

Broadcast Applications for Conifer Release in the Pacific Northwest and California

Dormant Conifers Before Bud Swell (Excluding Pines) -To control or suppress deciduous hardwoods such as vine maple, bigleaf maple, alder, scotch broom, or willow **before leaf-out** or evergreen hardwoods such as madrone, chinquapin, and *Ceanothus* spp., use Boulder at 1.25 pints to 1.25 quarts per acre. Diesel or fuel oil may be used as diluents. If applying in water, add 1 to 2 gallons per acre of diesel oil, a suitable surfactant, or an oil substitute at manufacturer's recommended rates.

Conifer Plantations (Excluding Pines) Before Conifer Bud Break and After Hardwoods Begin Growth ("Early Foliar" Hardwood Stage) – Apply Boulder at 1.25 to 2 pints per acre alone or in a tank mix with 2,4-D low volatile ester herbicide in water carrier. Apply no more than 3 pounds acid equivalent per acre from both products. After conifer bud break, these sprays may cause more serious injury to the crop trees. Use of a surfactant may cause unacceptable injury to conifers especially after bud break.

Conifer Plantations (Excluding Pines) After Conifers Harden Off in Late Summer and While Hardwoods Are Still Growing Actively – Apply Boulder at 1.25 to 2 pints per acre alone or in a tank mix with 2,4-D low volatile ester in water carrier. Apply no more than 3 pounds acid equivalent per acre from both products. Treat as soon after conifer bud hardening as possible so that hardwoods and brush are actively growing. Use of oil, oil substitute, or surfactant may cause unacceptable injury to the conifers.

Broadcast Applications for Conifer Release in the Eastern United States

To release spruce, fir, red pine, and white pine from competing hardwoods such as red maple, sugar maple, striped maple, alder, birch (white, yellow, and grey), aspen, ash, pin cherry, and *Rubus* spp. and perennial and annual broadleaf weeds, apply Boulder at 1 to 2 quarts per acre alone or in a tank mix with 2,4-D amine or low volatile ester. Apply no more than 4 pounds acid equivalent per acre from both products. Make applications in late summer or early fall after conifers have formed their over-wintering buds; and hardwoods are in full leaf prior to autumn coloration.

Broadcast Applications for Conifer Release in the Lake States Region

To release spruce, fir, and red pine from competing hardwoods such as aspen, birch, maple, cherry, willow, oak, hazel, and *Rubus* spp. and perennial and annual broadleaf weeds, apply Boulder at rates of 1 to 2 quarts per acre. Make applications in late summer or early fall after conifers have formed their over-wintering buds and hardwoods are in full leaf prior to autumn coloration.

Application Directions for Rangeland, Permanent Grass Pastures, and Conservation Reserve Program (CRP) Acres

Refer to Tables 1 and 2 of this label for a list of woody plants and broadleaf weeds that are controlled by Boulder.

Florida: Boulder may be applied to non-irrigation ditchbanks and fencerows on farms and ranches in addition to those uses listed in this section of the label.

Application Methods

Foliage Treatment with Ground Equipment

Use sufficient spray volume to completely and uniformly cover foliage using 10 or more gallons of total spray volume per acre. To ensure adequate coverage of plants with increased depth and density of foliage, and particularly for treatment of woody plants, use higher spray volumes.

High-Volume Foliage Treatment

To control susceptible woody plants, use the specified rate of Boulder alone or in a tank mix to make 100 gallons of spray mixture. For rangeland and permanent pasture sites, make 1 application per year and apply no more than 1.25 quarts of Boulder (2 lbs. ae of triclopyr) per acre. Boulder may be tank mixed with other herbicides at directed rates (see application rates table below) to control a broader spectrum of woody plants and broadleaf weeds. Be sure to follow all applicable use directions, precautions, and limitations on the respective product labels when tank mixing.

Apply sufficient spray volume to thoroughly wet all leaves, stems, and root collars. Minimize spray drift by using the minimum spray pressure that provides adequate plant coverage without forming a mist and direct sprays no higher than the top of the target plants. A drift control additive cleared for application to growing crops may also be used to reduce spray drift. For best results, apply when woody plants and weeds are actively growing.

Application Rates per 100 Gallons of Spray		
Boulder	Plus Tank Mix Product	Rate (qt)
1.25 pts. - 2.5 qts.	--	--
1.25 pts. – 1.25 qts.	Grazon® P+D specialty herbicide	4
0.63 pt. -1.25 pts.	2,4-D low volatile ester herbicide	1-2
1.25 pts. – 1.25 qts.	Tordon or Alligare Picloram 22K specialty herbicide	1-2
1.25 qts.	Reclaim® specialty herbicide ^{1,2} or Alligare Clopyralid 3	2

¹Reclaim* is registered for use only in Arizona, Texas, Oklahoma and New Mexico.

²See directions for Mesquite Control Using High Volume Foliage Treatment below.

Mesquite Control Using High Volume Foliage Treatment: To control low to moderate density mesquite infestations, apply a tank mixture of Boulder and Reclaim to individual plants with a backpack or hand-held sprayer or a vehicle-mounted sprayer with hand-held spray wand or spray gun. For individual plant treatment, use 1.25 quarts of Boulder with 2 quarts of Reclaim per 100 gallons of total spray solution (1/2% v/v of each product). Apply in water or as an oil-water emulsion as described in the Mixing Directions Section. If an oil-water emulsion is used, add the oil at a rate of 5% of the total spray volume. Apply as a complete spray-to-wet foliar application, including all leaves. Thorough coverage is necessary for good results, but do not spray to the point of runoff. This application method works best for brush less than 8 feet tall since efficient treatment and thorough coverage of taller brush is difficult to achieve using this method. Do not apply when mesquite foliage is wet. The total amount of Reclaim applied should not exceed 1 1/3 pints per acre. For best results, follow information given elsewhere in this label concerning effect of environmental conditions and application timing on control. To minimize drift, select a spray

nozzle and pressure that generates a coarse spray and provides good coverage. Drift may be reduced by directing sprays no higher than the top of target plants and by using the minimum pressure necessary to obtain plant coverage without forming a mist. If desired, a spray dye may be added to the spray mixture to mark the treated plants.

Broadcast Application With Aerial or Ground Equipment

Brush and weed control results are influenced by environmental conditions and application timing; for best results, apply when woody plants and weeds are actively growing. For woody species, apply when leaf tissue is fully expanded and terminal growth has slowed after the rapid growth period of early spring. To ensure adequate foliage for herbicide absorption, brush regrowth should be at least 4 ft. high prior to treatment. The presence of healthy foliage at the time of application as well as adequate soil moisture before and after treatment are important factors contributing to optimal herbicidal activity.

Apply sufficient spray volume to completely and uniformly cover foliage using 10 or more gallons of total spray volume per acre for ground applications and at least 2 gallons of total spray volume per acre for aerial applications. To ensure adequate coverage of plants with increased depth and density of foliage, and particularly for treatment of woody plants, use higher spray volumes.

Mesquite: The herbicidal response of mesquite is strongly influenced by foliage condition, growth stage and environmental conditions. For best results, apply when soil moisture is adequate for plant growth, the soil temperature is above 75°F at a depth of 12 to 18 inches, and new growth foliage has turned from light to dark green. Apply within 60 days after the 75°F minimum soil temperature at the 12 to 18 inch depth has been reached (the rate of soil warm-up at the 12 to 18 inch depth may vary with soil texture and drainage with coarse-textured (sandy) soils warming up sooner than fine-textured (clay) soils and dry soils warming up more quickly than wet soils). If the application is made before mesquite foliage has turned from light to dark green or if foliage has been injured or removed by late frost, insects, hail or plant diseases, product performance may be adversely affected. Do not treat if mesquite exhibits new (light green) terminal growth in response to recent heavy rainfall during the growing season and to ensure adequate foliage for herbicide absorption, mesquite regrowth should be at least 4 ft. high prior to treatment.

Mesquite Only

Apply 1/3 to 2/3 pint of Boulder per acre in combination with 2/3 to 1 1/3 pints per acre of Reclaim. Refer to the Reclaim label for additional treatment recommendations and information on mesquite control. Apply as an oil/water emulsion in 4 gallons or more total volume per acre for aerial applications or in 10 gallons or more total volume per acre for ground applications. Use no more than 1 gallon of oil per acre for both aerial and ground application.

Mesquite and Prickly Pear Cactus

For prickly pear cactus in association with mesquite, apply a tank mix of 1/3 to 2/3 pint of Boulder with 1 to 2 pints of Tordon or Alligare Picloram 22K per acre. For a higher and more uniform plant kill of prickly pear, use the 2 pint per acre rate of Tordon or Alligare Picloram 22K. To control prickly pear while providing improved control of mesquite, Tordon or Alligare Picloram 22K may also be applied in combination with Reclaim. Refer to the Tordon or Alligare Picloram 22K and Reclaim labels for additional information and treatment recommendations. Apply as an oil/water emulsion in 4 gallons or more total volume per acre for aerial applications or in 10 gallons or more total volume per acre for ground applications. Use no more than 1 gallon of oil per acre for both aerial and ground application.

South Texas Mixed Brush (Mesquite, Prickly Pear Cactus, Blackbrush, Twisted Acacia and Granjeno)

If prickly pear is a problem, apply 2/3 to 1.25 pints of Boulder in a tank mixture with 2 pints of Tordon or Alligare Picloram 22K per acre. If mesquite is the prevalent species apply 2/3 to 1.25 pints of Boulder with 2/3 to 1 1/3 pints of Reclaim per acre. Boulder contributes to the control of non-legume species such as granjeno and oaks; however, for improved control if primarily woody legume species are present, apply 2 pints of Tordon or Alligare Picloram 22K per acre in combination with 2/3 to 1 1/3 pints of Reclaim per acre. Refer to the Tordon or Alligare Picloram 22K and Reclaim labels for additional information and treatment recommendations. Apply as an oil/water emulsion in 4 gallons or more total volume per acre

for aerial applications or in 15 gallons or more total volume per acre for ground applications. Use no more than 1 gallon of oil per acre for both aerial and ground application. For acceptable brush control, an oil/water emulsion and good spray coverage is critical.

Sand Shinnery Oak Suppression

In Texas, New Mexico and Oklahoma, for suppression of shinnery oak growing on sandy soils apply Boulder alone at a rate of 1/3 to 1.25 pints per acre. Following suppression, grass response may be significant if rainfall is adequate. Deferring grazing after application together with proper grazing management is recommended to allow for the reestablishment of grass stands.

Post Oak and Blackjack Oak – Regrowth Stands

Apply when oak leaves are fully developed (expanded) in late spring to early summer (May-July). Use 1.25 quarts of Boulder alone or in tank mix combination with 0.5 to 1 pint of 2,4-D low-volatile ester herbicide per acre. Apply as an oil/water emulsion or water surfactant dilution in at least 5 gallons per acre total volume by fixed-wing aircraft or helicopter or 15 to 25 gallons per acre total volume by ground equipment. Use no more than 1 gallon of oil per acre for both aerial and ground application. For suppression only, lower rates may be used. Control will require at least 3 consecutive treatments. **Note:** Because regrowth plants have a large root mass relative to top growth, delay broadcast treatment until top growth is at least 4 ft. tall in order for the top growth to intercept and translocate sufficient herbicide to control the roots.

High Volume Foliage Treatment: For regrowth less than 4 ft tall, apply 1.25 quarts of Boulder per 100 gallons of water and 2 quarts of ag surfactant alone or in tank mix combination with 1 gallon of Grazon P+D or 1 quart of Tordon or Alligare Picloram 22K. Apply to individual plants as a high volume leaf-stem treatment using ground equipment.

Post Oak and Blackjack Oak – Mature Stands

To control mature stands (greater than 5 ft tall), apply 1.25 quarts of Boulder per acre when oak leaves are fully developed (expanded) in late spring to early summer (May-July). When using Boulder alone, some understory species such as winged elm, buckbrush, tree huckleberry and ash occurring in some areas will be suppressed or defoliated but not controlled. Where these understory species occur, control may be improved by tank mixing 1.25 quarts of Boulder with 1 quart of Tordon or Alligare Picloram 22K or 4 quarts of Grazon P+D per acre. For best results, apply using fixed-wing aircraft or helicopter as an oil/water emulsion in a total volume of 5 or more gallons per acre.

Other Susceptible Woody Plants

Apply 1.25 pints to 1.25 quarts of Boulder alone or in combination with 2 to 3 quarts of 3.8 lb/gal 2,4-D low volatile ester or amine formulation per acre. If applications are made when plants are mature late in the summer, during drought conditions, or if difficult to control species such as ash, choke cherry, elm, maple or oaks are prevalent on the site, use the higher rates of Boulder, alone or with 2,4-D. For increased control of certain species, Boulder may also be applied in a tank mixture with Grazon P+D or Tordon or Alligare Picloram 22K, refer to the labels for Grazon P+D and Tordon or Alligare Picloram 22K for additional information and treatment recommendations. Apply in 4 gallons or more total volume per acre aerially or in 10 gallons or more total volume per acre when using ground equipment. Apply during or after bloom for best results on blackberry. For management of kudzu, use 1.25 pints of Boulder per acre. To achieve the desired level of control, repeat applications may be necessary.

Susceptible Broadleaf Weeds

When weeds are actively growing, apply 1.25 pints of Boulder per acre as a broadcast spray in a total volume of 10 or more gallons per acre by ground equipment or in a total volume of 2 or more gallons per acre aerially. Boulder at a rate of 1/3 to 2 pints may be tank mixed with 1 to 2 quarts of 3.8 lb/gal 2,4-D amine or low volatile ester.

Growing Point and Leaf Base (Crown) Treatment of Yucca

Prepare a 2% v/v solution of Boulder in diesel or fuel oil (8.25 fl oz of Boulder in 5 gallons of spray mixture). Thoroughly wet the center of the plant including growing point and leaf bases to the soil surface. Complete coverage of leaves is not necessary.

Conservation Reserve Program (CRP) for Established Permanent Grass Stands

NOTE: Use Boulder on CRP acres only after perennial grasses are well established.

Broadcast Application Ground or Aerial: For small weed control, apply 2/3 to 1.25 pints of Boulder per acre. For deep-rooted perennial and susceptible woody species control apply up to 1 quart of Boulder per acre. Apply in 2 gallons or more total volume per acre for aerial applications or in 10 gallons or more total volume per acre for ground applications.

Restrictions:

- Apply no more than 1 quart of Boulder per acre per growing season on CRP acres.
- When applying to CRP lands, follow all applicable state and federal regulations. Follow the most severe grazing restriction imposed by the pesticide label or by the USDA Acreage Conservation Reserve Program. After that time period, follow local (CRP) guidelines regarding cropping and haying restrictions. If legumes are a desired cover crop during CRP, do not use Boulder.

Application Directions for Ornamental Turf

Refer to Table 2 for a list of broadleaf weeds controlled by Boulder.

For spot treatments, do not apply more than 1.25 qts. of Boulder per acre in a single application.

Foliar sprays should be applied during warm weather, from early spring through fall, when weeds are actively growing. Broadleaf weeds germinate at different times. Only emerged weeds present at the time of application will be controlled. Newly seeded turf should be mowed 2 or 3 times before being treated. When making applications to mature plants, hard-to-control species, or during drought conditions, use higher rates. Application under drought conditions may provide less than desirable results. Use low pressure sprays to minimize spray drift. Do not water for 24 hours after application.

Mixing Instructions

When Boulder is mixed with water it forms an emulsion (not a solution) and separation may occur unless the spray mixture is agitated continuously.

Add about one-half the required amount of clean water to the spray tank. Start agitation and add the specified amount of Boulder. Provide moderate agitation while completing the addition of water and during application.

Reseeding Precaution: Do not reseed for 3 weeks after application. (This precaution does not apply when bermudagrass turf is overseeded with perennial ryegrass at a minimum reseeding of 400 lbs. per acre.)

Broadcast Treatment of Ornamental Turf

Apply 2/3 to 1.25 pints per acre of Boulder in enough water to provide uniform coverage of the target area to control actively growing broadleaf weeds growing in perennial bluegrass, perennial ryegrass, or tall fescue. Do not use on other turfgrass species (see Use Precautions section of this label) unless injury can be tolerated. To minimize turf injury, do not treat if turf is under heat-or drought-stress and make repeat applications at least 4 weeks apart.

Tank Mixing: To improve the spectrum of activity, Boulder may be tank mixed at a rate of 1/3 to 2/3 pint per acre with directed rates of low volatile amine or ester formulations of 2,4-D, MCP, or other labeled postemergence broadleaf herbicides. Refer to tank mix product labels for specific use directions, precautions, and limitations before use.

Spot Treatment of Ornamental Turf

Mix 0.25 to 0.5 ounces of Boulder per 1000 square feet in enough water to provide uniform coverage of the target area and apply at any time broadleaf weeds are susceptible. **Note:** Do not apply more than 1.25 quarts per acre or 1 ounce per 1000 square feet of Boulder in a single application.

Control of Kikuyugrass

Apply Boulder at a rate of 2/3 to 1.25 pints per acre. To improve activity, MSMA herbicide may be tank mixed with the 2/3 pint per acre rate of Boulder. Three to four additional applications at 4 to 6 week intervals may be required to achieve control of kikuyugrass.

Suppression of Bermudagrass

Apply Boulder at the rate of 1.25 pints per acre. Three to four additional applications at 4 week intervals will be required to give adequate suppression of bermudagrass and allow fescue or other desired turfgrass species to dominate. To improve suppression and control of bermudagrass, 1.25 pints per acre of Boulder may be tank mixed with a postemergence grass herbicide registered for this use pattern. Three to four additional applications of this tank mix at 4 week intervals should be made to achieve control. Reseeding following application will accelerate the transition to cool season turf (see Reseeding Precautions above).

Table 1
Woody Plants Controlled by Boulder

Alder	Dogwood	Oaks	Thimbleberry
Arrowwood	Douglas fir	Osage Orange	Tree-of-Heaven (<i>Ailanthus</i>) ¹
Ash	Elderberry	Pepper Vine ³	Trumpet Creeper ³
Aspen	Elm	Persimmon	Tulip Poplar
Bear Clover (Bearmat)	Gallberry	Persimmon, Eastern	Twisted Acacia
Beech	Gorse	Pine	Virginia Creeper ³
Birch	Granjeno	Poison Ivy	Wax Myrtle
Blackberry	Guajillo	Poison Oak	Wild Rose
Blackbrush	Guava ³	Poplar	Willow
Black gum	Hawthorn	Salmonberry	Winged elm
Boxelder ¹	Hazel	Saltbush (<i>Braccharis</i> spp.)	
Brazilian Pepper	Hickory	Saltbush (silver myrtle) ³	
Buckthorn	Hornbeam	Salt Cedar ¹	
Cascara	Huisache (suppression)	Sassafras	
Ceanothus	Kudzu ²	Scotch Broom	
Cherry	Locust	Sumac	
Chinquapin	Madrone	Sweetbay Magnolia	
Choke Cherry	Maples	Sweet Gum	
Cottonwood	Milkweed Vine ³	Sycamore	
<i>Crataegus</i> (hawthorn)	Mulberry	Tan Oak	

¹For best control, use either a basal bark or cut stump treatment.

²For complete control, retreatment may be necessary.

³Basal or dormant stem applications only

Table 2

Annual and Perennial Broadleaf Weeds Controlled by Boulder

Black Medic	Curly dock	Matchweed	Sulfur Cinquefoil (2)
Bull Thistle	Dandelion	Mustard	Sweet Clover
Burdock	Dogfennel	Oxalis	Tropical Soda Apple (3)
Canada Thistle	Field Bindweed	Plantain	Vetch
Chicory	Goldenrod	Purple Loosetrife	Wild Carrot (Queen Anne's Lace)
Cinquefoil	Ground Ivy	Ragweed	Wild Lettuce
Clover	Lambsquarters	Sericea Lespedeza (1)	Wild Violet
Creeping Beggarweed	Lespedeza	Smartweed	Yarrow

- (1) **Sericea lespedeza:** Apply 2/3 to 1.25 pints of Boulder per acre. For best results, apply after maximum foliage development in the late spring to early summer, but prior to bloom.
- (2) **Sulfur cinquefoil:** Apply 2/3 to 1.25 pints of Boulder per acre. For best results, apply to plants in the rosette stage.
- (3) **Tropical soda apple:** When plants reach the first flower stage, apply 1.25 pints of Boulder per acre. For best results, apply using ground equipment in a total spray volume of 40 gallons per acre. To provide more complete wetting and coverage of the foliage, an agricultural surfactant may be added at the manufacturer's recommended rate. To control sparse plant stands, use spot treatments. For spot treatment use a 1 to 1.5% solution of Boulder in water (1 to 1 ½ gallons of Boulder in 100 gallons total spray mixture) and spray the entire plant to completely wet the foliage. **In Florida**, control of tropical soda apple may be improved by using the following management practices:
 - Mow plants to a height of 3 inches every 50 to 60 days or whenever they reach flowering. Continue mowing on this schedule through April.
 - In late May to June (50 to 60 days after the April mowing), apply a broadcast treatment of Boulder.
 - To control any remaining plants or to thin stands of plants that germinate following a broadcast treatment, use spot treatments.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

PESTICIDE STORAGE: Store above 28°F or agitate before use.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product (that cannot be used according to label instructions) must be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL:

[NONREFILLABLE CONTAINERS:]

Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. Triple rinse container (or equivalent) promptly after emptying.

(Nonrefillable container ≤ 5 gallons): Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill or by incineration. Do not burn unless allowed by state and local ordinances.

(Nonrefillable > 5 gallons): Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill or by incineration. Do not burn unless allowed by state and local ordinances.

[REFILLABLE CONTAINERS:]

Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill or by incineration. Do not burn unless allowed by state and local ordinances.

LIMITED WARRANTY, TERMS OF SALE, AND LIMITATION OF LIABILITY

Upon purchase or use of this product, purchaser and user agree to the following terms:

Warranty: Alligare, LLC (the Company) warrants that this product conforms to the chemical description on the label in all material respects and is reasonably fit for the purpose referred to in the directions for use, subject to the exceptions noted below, which are beyond the Company's control. To the extent consistent with applicable law, the Company makes no other representation or warranty, express or implied, concerning the product, including no implied warranty of merchantability or fitness for a particular purpose. No such warranty shall be implied by law, and no agent or representative is authorized to make any such warranty on the Company's behalf.

Terms of Sale: The Company's directions for use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, and the manner of use or application (including failure to adhere to label directions), all of which are beyond the Company's control. To the extent consistent with applicable law, all such risks are assumed by the user.

Limitation of Liability: To the extent consistent with applicable law, the exclusive remedy against the Company for any cause of action relating to the handling or use of this product is a claim for damages, and in no event shall damages or any other recovery of any kind exceed the price of the product which caused the alleged loss, damage, injury or other claim. To the extent consistent with applicable law, under no circumstances shall the Company be liable for any special, indirect, incidental or consequential damages of any kind, including loss of profits or income, and any such claims are hereby waived. Some states do not allow the exclusion or limitation of incidental or consequential damages.

The Company and the seller offer this product, and the purchaser and user accept this product, subject to the foregoing warranty, terms of sale and limitation of liability, which may be varied or modified only by an agreement in writing signed on behalf of the Company by an authorized representative.

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